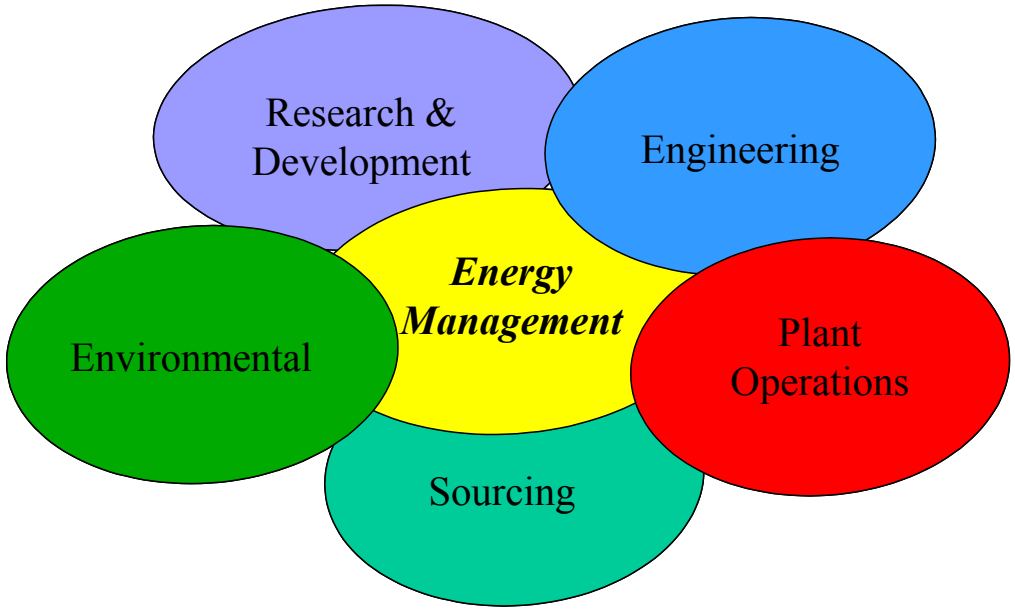
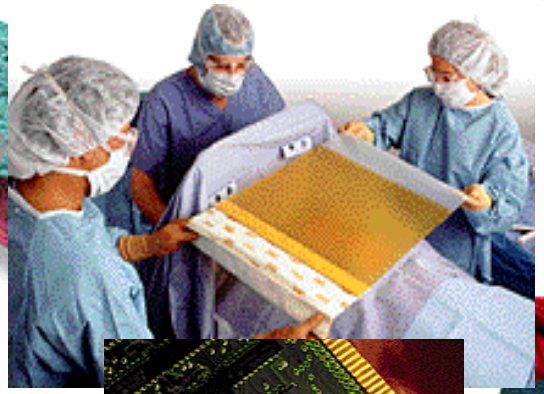
3M Energy Management

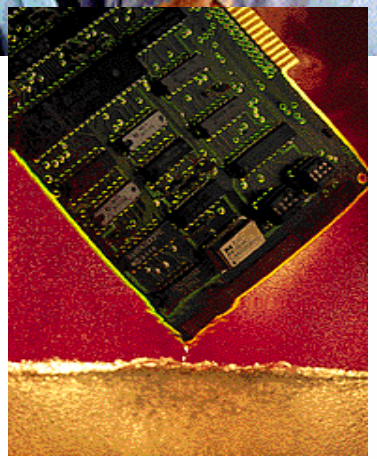


Making Energy Efficiency a Competitive Advantage for 3M

Produkter
Produkten
Tvotteet
Produits
Produkte
Prodotti
Produkt
Produtos
Productos
Produkter
Produkter
Produkten
Tvotteet
Produits
Produkte
Prodotti
Produkt
Produtos
Productos
Produkter
Produkter
Produkten

Products





3M Energy Management Strategy

Objectives
- Make energy/carbon efficiency a competitive advantage for 3M
- Reduce environmental impacts
- On-going cost reduction
- Maintain positive 3M image
- Global

Strategies
- Corporate Program and Goals
- Accountability
- Long and Short Term Objectives
- Broad Participation
- Communicate
- Voluntary Government Programs

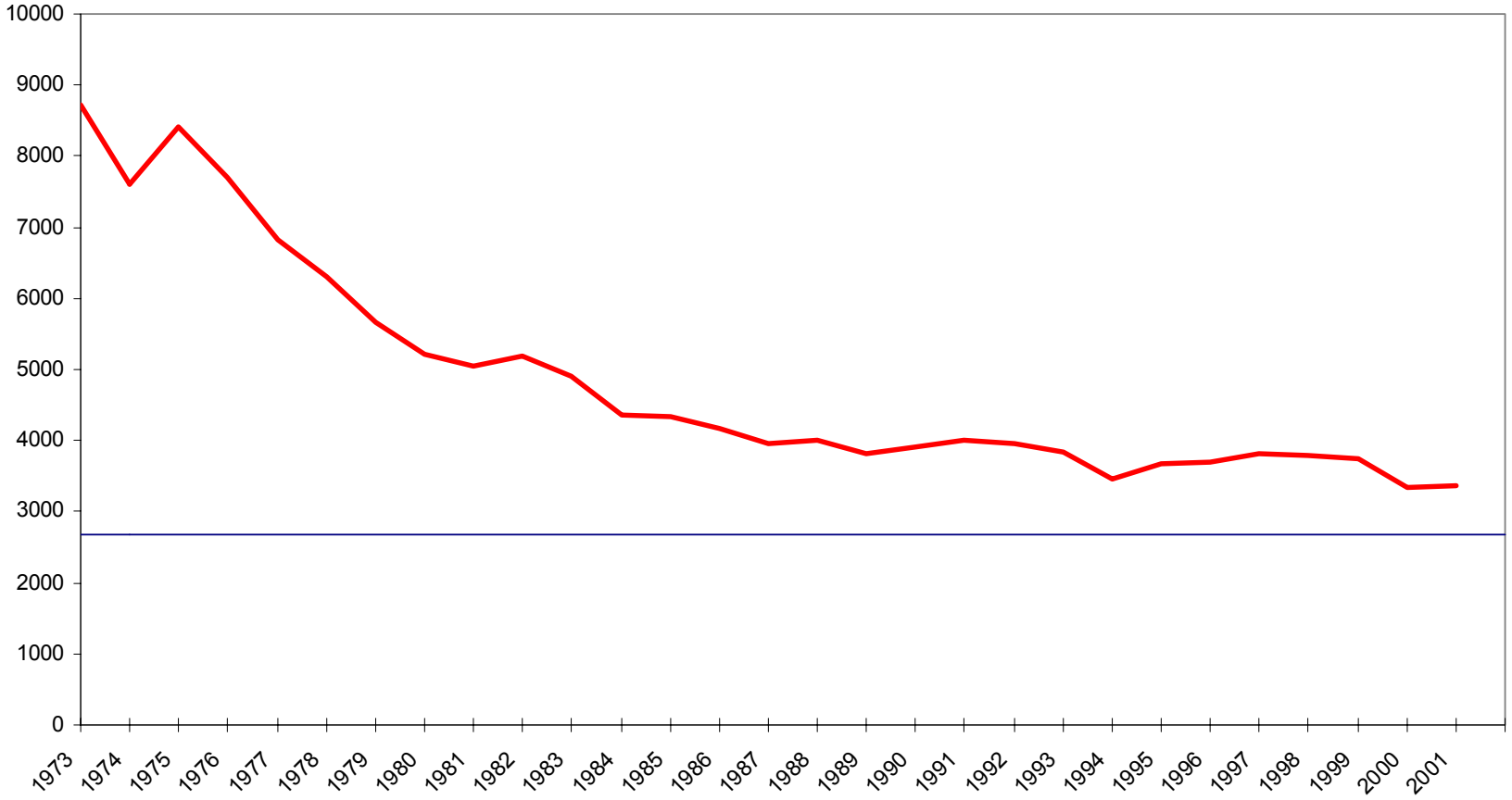
Issues
- Costs
- Competition
- Environmental Impact
- Availability
- Regulations
- Internal

Corporate Goal and Accountability
- 4% per year improvement
- Corporate Energy Management Group Drives Program

Long and Short Term Objectives
- Plant Operations
- Engineering
- Research and Development
- Procurement

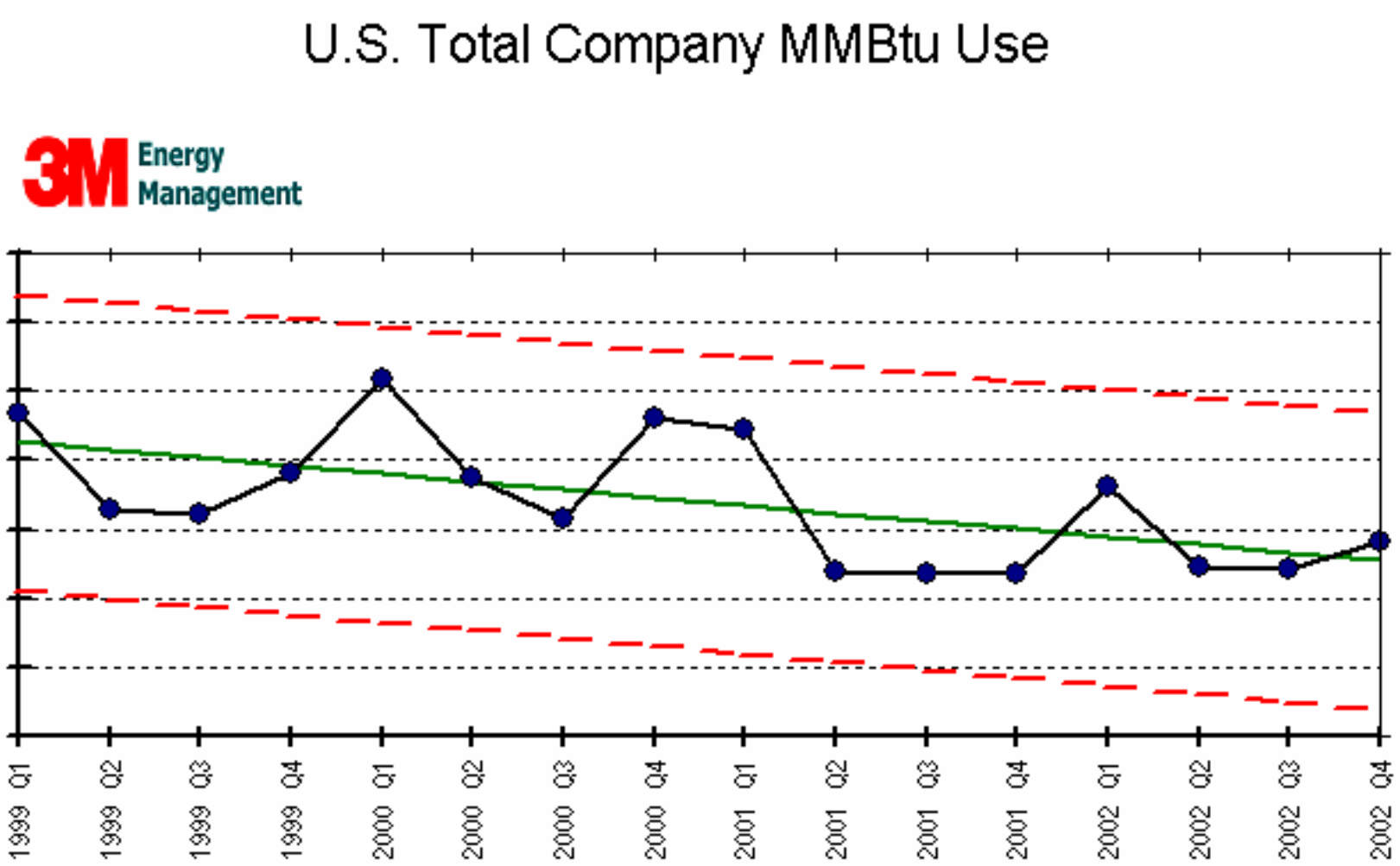
Voluntary Programs
- EPA Green Lights, Energy Star, Green Power Partnership
- DOE Motor, Steam, Compressed Air Best Practices, Vision 2020

3M US Energy Use per SVOP



3M Energy Management

The Program Works!



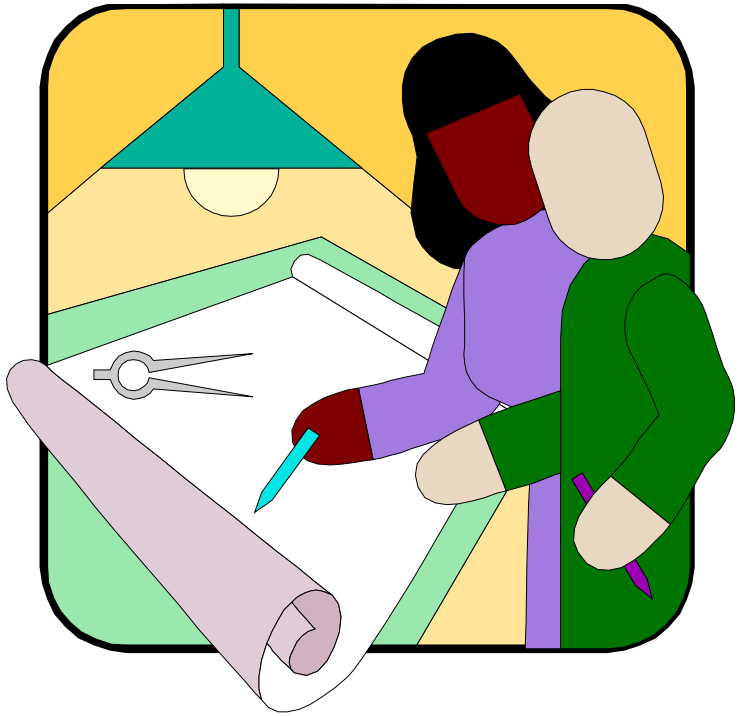
Product Research and Development

Life Cycle Management Process

- Raw Materials
- R&D Operations
- Manufacturing, Packaging, Distribution
- Products Use, Reuse, Maintenance
- Recycle, Final Disposition

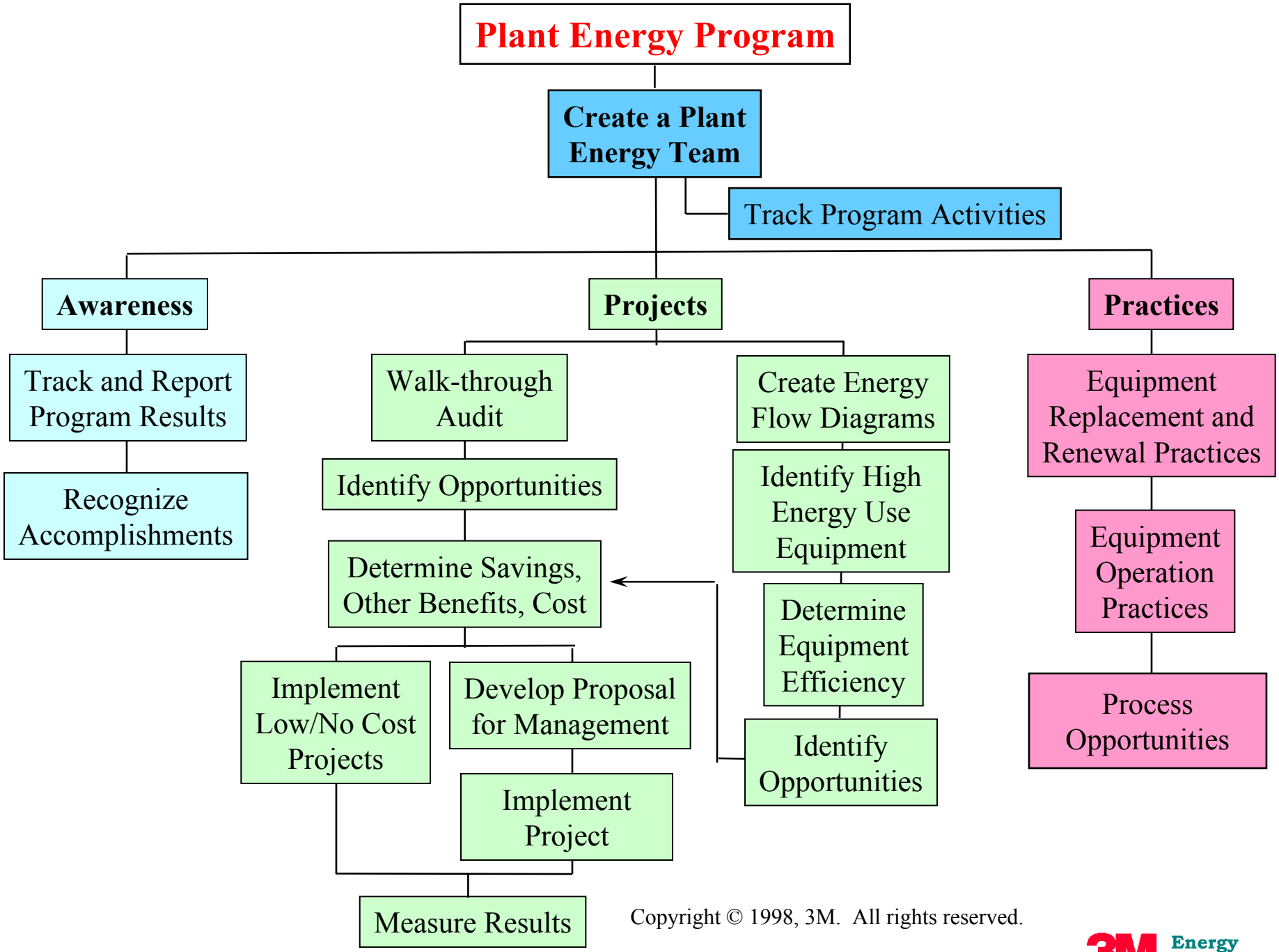
Engineering
Building and Equipment Design

- Most Cost Effective Time to be Energy Efficient
- Engineering Design Reviews
- Energy Minichapter
- Best Practices
- Energy Technology Champions
- Resources to Plant Operations



Plant Energy Program

- Sponsored by Plant Management
- Team Champion
- Production, Plant Engineering and Resident Engineering Represented



3M Energy Management

3M World Class Energy Assessment
Date:
Location:

Assessment Worksheet Energy Assessment Criteria	For more info, see: Volume II – Energy Implementation Guide	% Level of Implementation in Your Operation (round to nearest 5%)	Available Points	Your Rating Points (available points X % implemented)
I. A plant energy team has been formed with representation from Plant Engineering, Resident Engineering and Production. All employees have been informed of the existence of the Energy Team and it's purpose.	Implementation Guide sections 3.0, 3.1 and 3.3		20	
II. Energy usage in each section of the plant is tracked and reported. Energy costs are recharged according to actual usage. Energy data is reported to Corporate Energy Management regularly.	Implementation Guide section 3.3.1		15	
III. The highest energy using equipment has been identified, and operating efficiency ratings have been determined. Methods of maintaining the efficiency of this equipment have been put into practice.	Implementation Guide sections 3.4.8 through 3.4.10		10	
IV. A Walk-Through Audit has been performed within the past year to identify energy saving opportunities. Opportunities for improvement, cost savings and other benefits have been identified and prioritized.	Implementation Guide sections 3.4.1 through 3.4.3. Also Appendix C and D.		15	
V. Low/no cost project have been implemented. Proposals have been submitted to management to fund energy saving projects, and implementation of those projects has begun.	Implementation Guide sections 3.4.4 through 3.4.7		15	
VI. Equipment operating practices have been reviewed and areas of improvement have been identified and implemented.	Implementation Guide section 3.5.2		5	
VII. Plant manufacturing processes have been reviewed and areas for improved energy utilization have been identified in conjunction with appropriate plant personnel.	Implementation Guide section 3.5.3		10	
VIII. Plans are in place to ensure that equipment is replaced with higher efficiency equipment when renewal or replacement becomes necessary.	Implementation Guide section 3.5.1		5	
IX. Energy program results have been measured and communicated to all employees identifying the impact of this program in the plant. Recognition has been provided to those who have participated in the program.	Implementation Guide section 3.2, 3.3.1 and 3.3.2. Also Appendix B.		5	
			Total Score:	

Resources Available

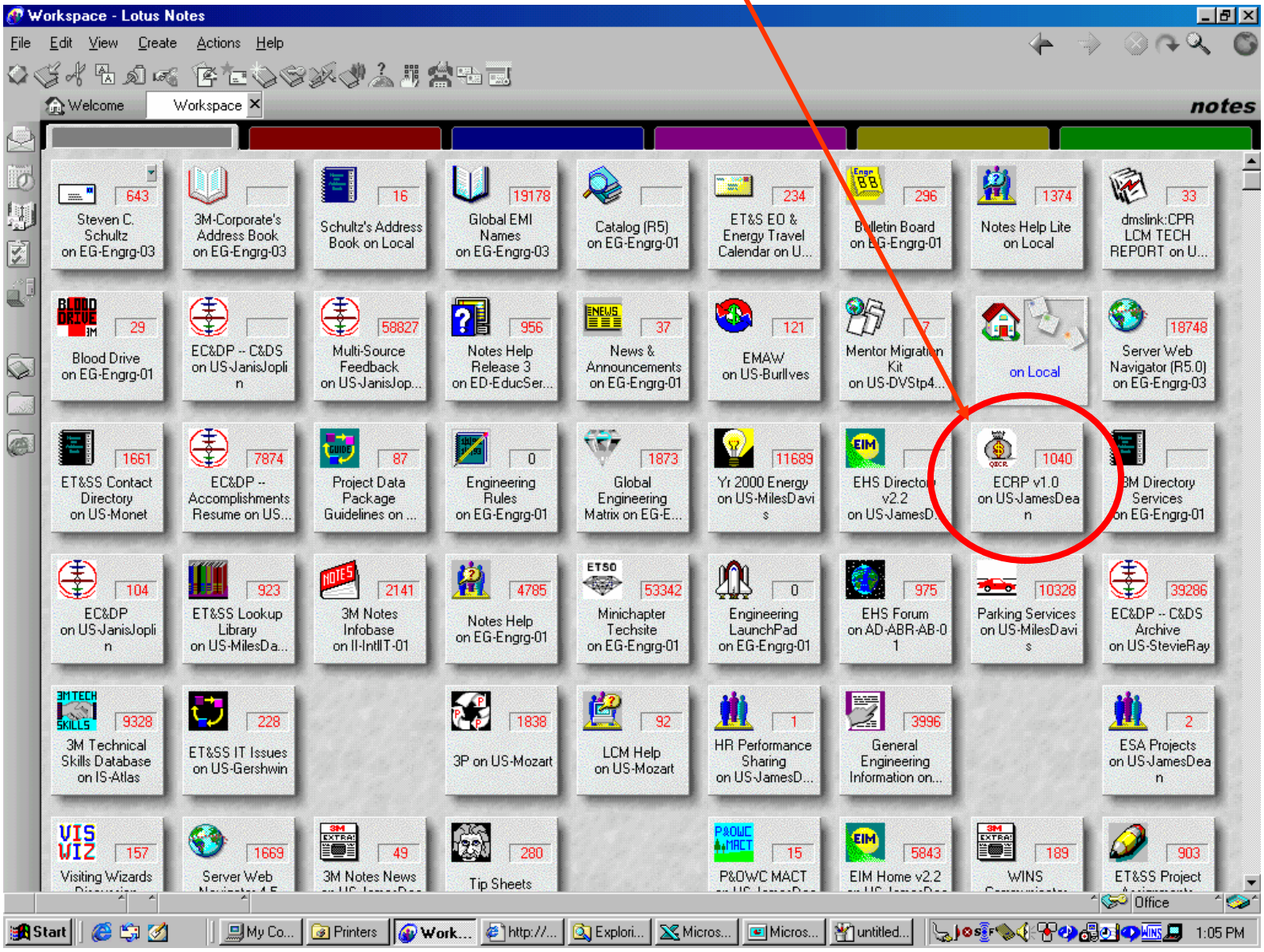
- Web Page, Energy Database, Projects Database
- Plant Program, Implementation Guide, Best Practices
- Regional Meetings, Conference Calls and Netmeetings
- Department of Energy
  - Technology Based Support
  - Plant-wide Assessments
    - DOE will share 50% of internal and external costs relating to a plant energy assessment
  - Implementing Project Saving $700,000 per Year, 1.2 Year Payback

Resources Available

- Department of Energy
  - Technology Based Support
  - Plant-wide Assessments
    - DOE will share 50% of internal and external costs relating to a plant energy assessment
- EPA Energy Star
  - Energy Management Fundamentals
  - Communications

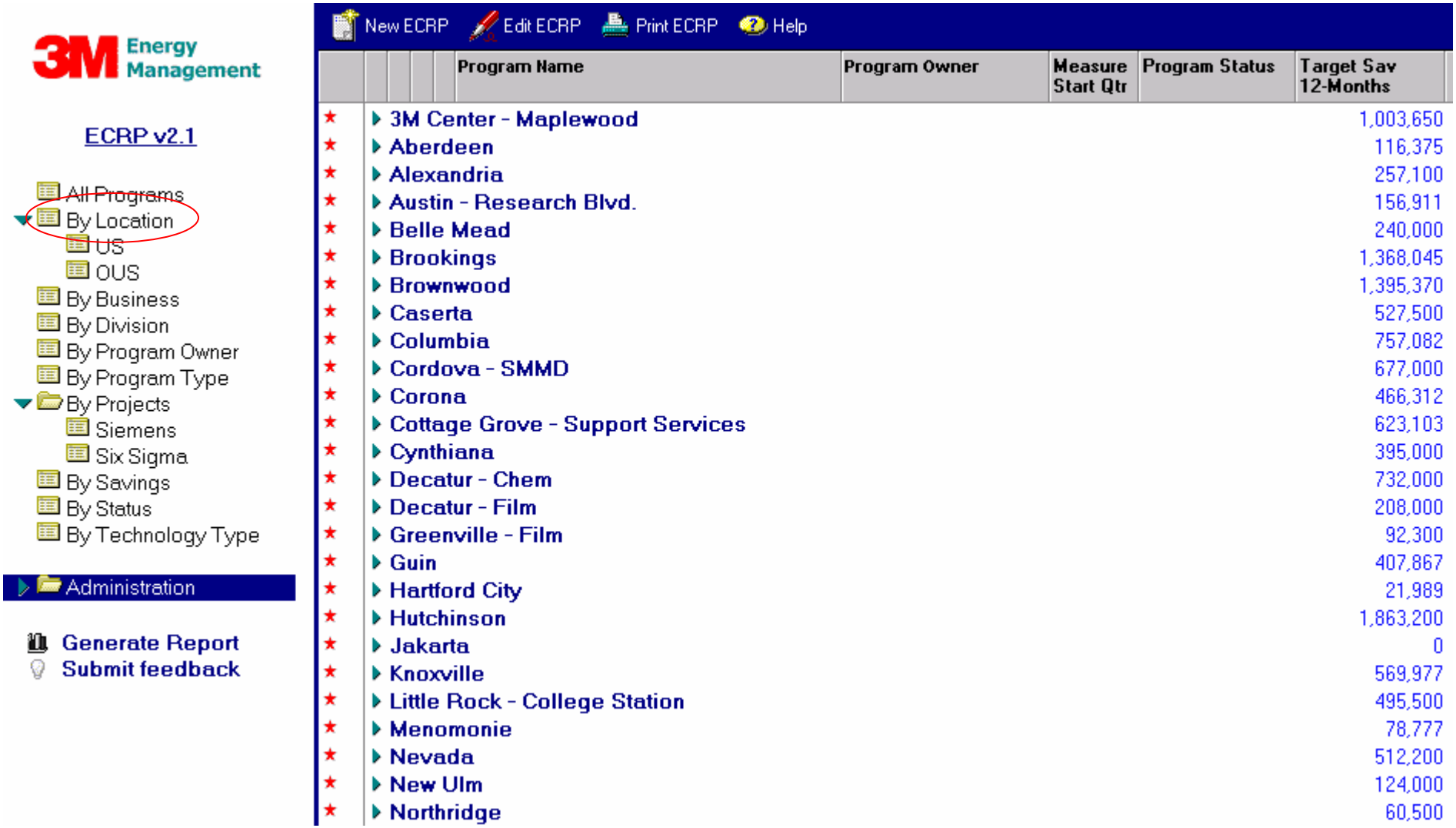
Energy Cost Reduction Projects Database

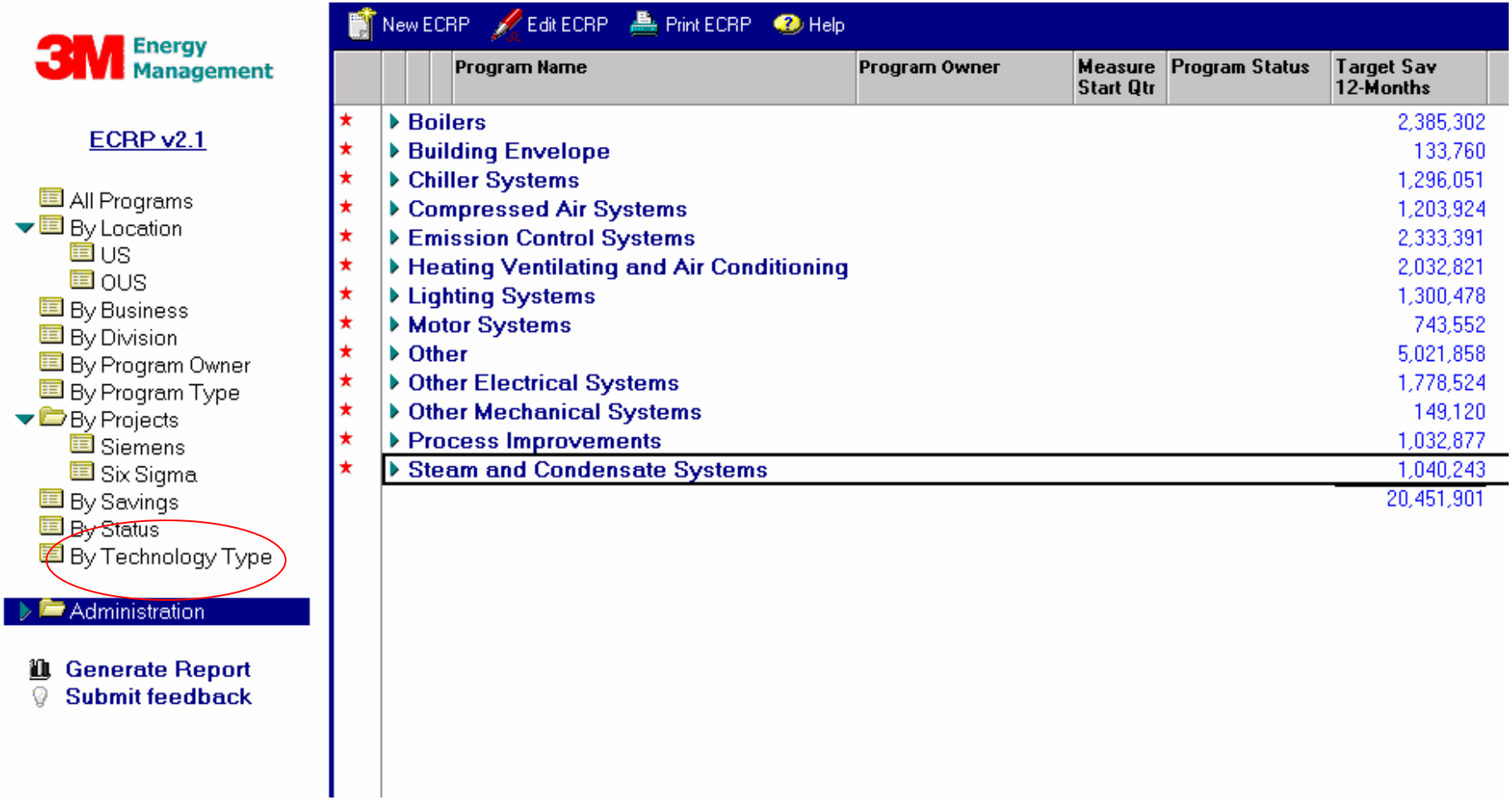
- Share Project Information
- Provide Inputs to Corporate
- Identify $ and MM Btu Savings
  - Allows Calculation of CO_2 Reductions
- Identifies Project Barriers
- Aids in Capital Planning



3M Energy Management


3M Energy Management
ECRP v2.1
All Programs
By Location
US
OUS
By Business
By Division
By Program Owner
By Program Type
By Projects
Siemens
Six Sigma
By Savings
By Status
By Technology Type
Administration
Generate Report
Submit feedback
New ECRP
Edit ECRP
Print ECRP
Help
Program Name
Program Owner
Modified
Measure Start Qtr
Program Status
Target Sav 12-Months
Heat Recovery | Brian T. Guggisberg | 02/26/2003 | 2004 Q2 | Identified | 772,000
Electrical Deregulation Pricing | Fred B. Kelly | 01/23/2003 | 2002 Q1 | Planned | 750,000
Replace FI with a TO | Kevin G. Bloom | 01/20/2003 | 2004 Q2 | Identified | 710,000
Reduce Energy Usage | Antonio Rea | 01/16/2003 | 2002 Q1 | Delivered | 527,500
Waste Gassifier | Kevin G. Bloom | 01/20/2003 | 2005 Q2 | Identified | 515,000
Automatic control of AHU (on Production area) | Jim Lee | 12/19/2002 | 2001 Q1 | Being Evaluated | 500,000
Low Temperature Project - IMPD Lab | Shannon Runsick | 01/23/2003 | 2001 Q2 | Identified | 415,000
Reduce Electrical useage | Brian T. Guggisberg | 02/26/2003 | 2003 Q3 | Identified | 400,000
Power Monitory system | Y.C. Tsai | 12/19/2002 | 2001 Q1 | Being Evaluated | 318,600
Boiler Feedstock Selection | Martin Casillas | 02/24/2003 | 2000 Q1 | Secured | 300,000
NYPA Expansion Power Line 3, 4 | Vincent Olivieri | 12/19/2002 | 2001 Q2 | Dropped | 245,280
Fix Leaks (Air, Steam) 5% Reduction Film/Dyneon Plant | Terry Brooks | 01/23/2003 | 2001 Q1 | Delivered | 208,000
Fix Leaks (air, steam). Achieve a 5% reduction. | Terry Brooks | 01/23/2003 | 2001 Q1 | Delivered | 208,000
Building Temperature Setpoints | David Emanuel | 12/19/2002 | 2001 Q1 | Secured | 200,000
NIMO Electricity Service Classification SC 12 | Vincent Olivieri | 12/19/2002 | 2001 Q3 | Identified | 200,000
6 Sigma Kiln natural gas reduction project | Jim Burkhardt | 02/24/2003 | 2002 Q1 | Delivered | 184,000
#4 Chiller, Electric | Tom Erickson | 12/19/2002 | 2001 Q3 | Identified | 183,000
Steam System Upgrade | Vincent Olivieri | 12/19/2002 | 2001 Q3 | Planned | 168,454
Conservation Chemical Shutdown Audits | Terry Brooks | 01/23/2003 | 2001 Q1 | Delivered | 164,000
Individual dust collectors | Thomas D. Hedstrom | 12/19/2002 | 2003 Q2 | On Hold | 159,500
Increase Maker % LFL Levels | Mike Handley, David A. Cooper | 01/23/2003 | 2001 Q1 | Planned | 150,000
Site Condensate Return Suppliment | Michael J. Dillon | 02/06/2003 | 2003 Q2 | Identified | 148,489
Six Sigma Thermal Oxidier Energy Reduction Program | Fred B. Kelly | 01/23/2003 | 2002 Q1 | Planned | 148,000


3M Energy Management
ECRP v2.1
All Programs
By Location
US
OUS
By Business
By Division
By Program Owner
By Program Type
By Projects
Siemens
Six Sigma
By Savings
By Status
By Technology Type
Administration
Generate Report
Submit feedback
New ECRP
Edit ECRP
Print ECRP
Help
Program Name
Program Owner
Measure Start Qtr
Program Status
Target Sav 12-Months
3M Center - Maplewood 1,003,650
Aberdeen 116,375
Alexandria 257,100
Austin - Research Blvd. 156,911
Belle Mead 240,000
Brookings 1,368,045
Brownwood 1,395,370
Caserta 527,500
Columbia 757,082
Cordova - SMMD 677,000
Corona 466,312
Cottage Grove - Support Services 623,103
Cynthiana 395,000
Decatur - Chem 732,000
Decatur - Film 208,000
Greenville - Film 92,300
Guin 407,867
Hartford City 21,989
Hutchinson 1,863,200
Jakarta 0
Knoxville 569,977
Little Rock - College Station 495,500
Menomonie 78,777
Nevada 512,200
New Ulm 124,000
Northridge 60,500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Submit feedback
New ECRP
Edit ECRP
Print ECRP
Help
Program Name
Program Owner
Measure Start Qtr
Program Status
Target Sav 12-Months
Boilers 2,385,302
Building Envelope 133,760
Chiller Systems 1,296,051
Compressed Air Systems 1,203,924
Emission Control Systems 2,333,391
Heating Ventilating and Air Conditioning 2,032,821
Lighting Systems 1,300,478
Motor Systems 743,552
Other 5,021,858
Other Electrical Systems 1,778,524
Other Mechanical Systems 149,120
Process Improvements 1,032,877
Steam and Condensate Systems 1,040,243
20,451,901